

# Geothermal Energy Project Brief

California Energy Commission

June 2002

## Modoc High School Geothermal Heating System

### PURPOSE

To provide space heating and domestic hot water to the Modoc High School in Alturas, Modoc County, California using geothermal resources.

### FUNDING AND OWNERSHIP

The school owns and operates the whole system, which has been in operation since 1990.

The California Energy Commission provided co-funding for drilling the geothermal production well and construction of the geothermal heating systems.

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|---|------------------|
| Awards to Modoc Joint<br>Unified School District    | \$585,536        |
| Match funds, Modoc Joint<br>Unified School District | <u>21,751</u>    |
| <b>Total</b>  | <b>\$607,287</b> |

### GEOHERMAL RESOURCE AND SYSTEM DESIGN

The direct-use geothermal system provides heat for the school's wood shop, auto shop, art room, weight room, and gymnasium. It also provides hot water for the showers. The system is shut down during the summer months when the school facilities are not being utilized.

A single 2940 foot deep well on high school property provides geothermal fluids at 160 degrees F. A flow rate of about 60 gallons per minute (GPM) is produced, dependent on the

weather. The fluid flows through fiberglass insulated pipeline to two separate heat exchangers.

After use, the very clean fluids flow into the city storm drain system, approximately 400 feet from the school and then are discharged into the nearby Pit River. Discharge is monitored periodically as a condition of the surface discharge permit.

### SAVINGS AND PAYBACK PERIOD

The school estimates that the geothermal system provides a cost saving of about 50% of their monthly gas and electric bill. The payback time for the system was about 10 years.

**For more information on this project, contact:**

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